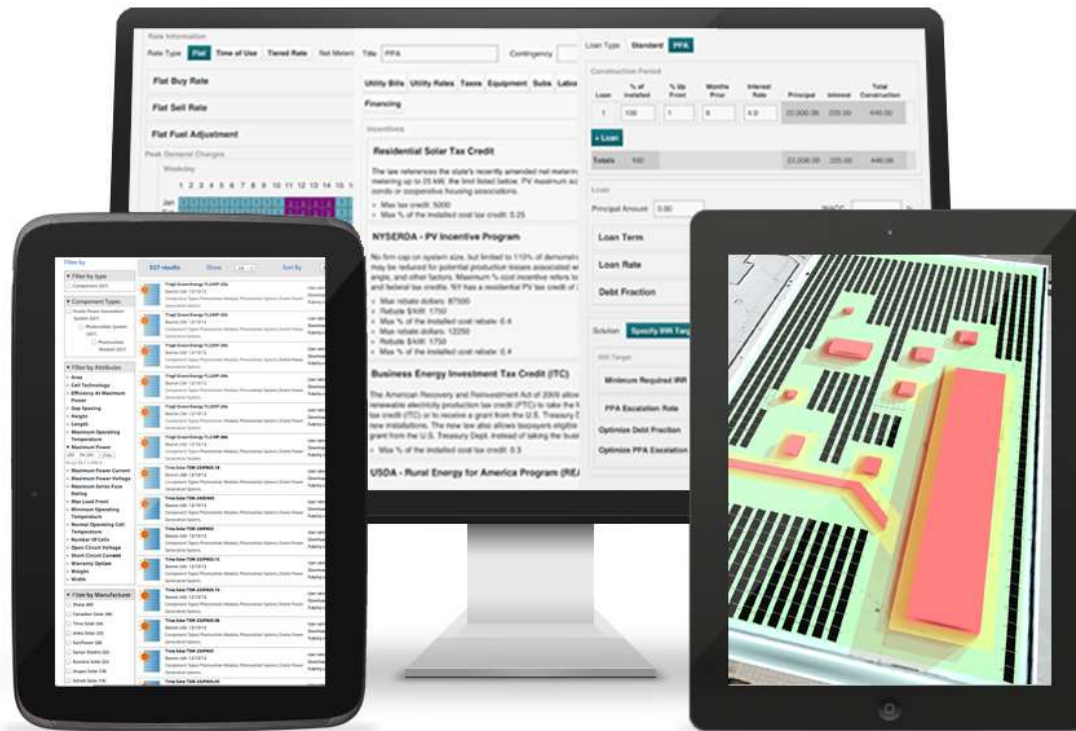


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Rapid, cloud-based mobile energy audit & solar assessment applications



August 14, 2013

Oliver Davis, CEO and co-founder concept3D and simuwatt

Industry – Government Collaboration



Building Component Library (BCL)

CRADA

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Go to Market Fall-Winter 2013/14

Opportunity

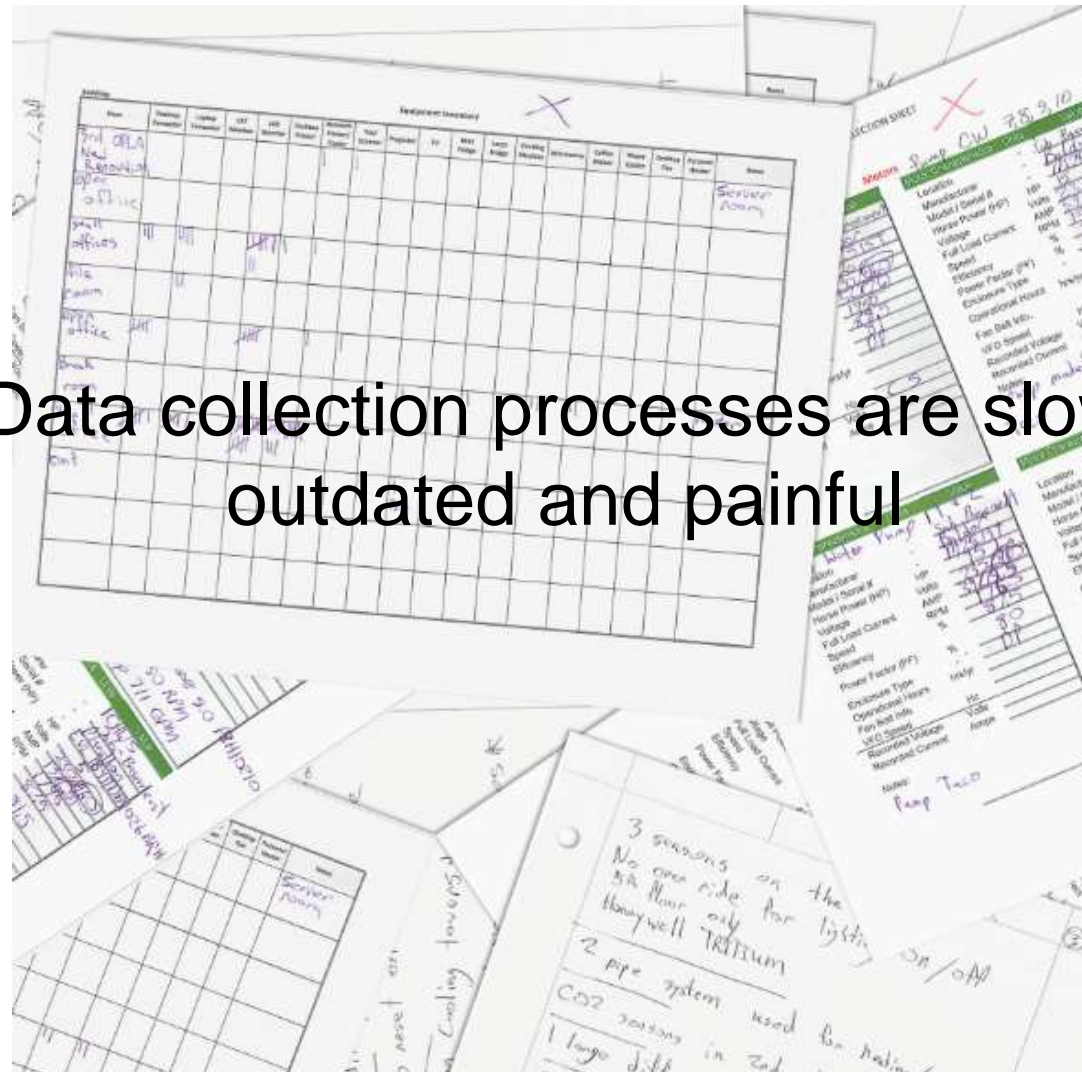
- EE market is growing from ~\$5B today to \$11-\$15B by 2020 (*Peter Larsen, LBNL Study*)
- The ESPC market is ~1/3 of overall federal programs savings (*Dr. Tim Unruh, DOE*)
- The expectation is to continue improving efficiency, *13% efficiency remains for EISA...low hanging fruit is gone*
- Tools have to keep up with demand and identify big opportunities for Levels 2 and 3 retrofits/ESPC (*\$71-\$133B total market opportunity – LBNL*)

Audit Problem, Objective and Approach

- Problem:
 - High quality energy audits are necessary for ESPC's, but \$
 - Lack of data standards prevent aggregation and reuse
 - ESCOs require investment-grade data and analysis
 - Energy audits are mandated by EISA 2007 – quality is cost-prohibitive
 - Many advanced tools are kept in-house/proprietary
 - Still need to walk through the building to get good data

EPC's Need Good Data and Fast, But....

Data collection processes are slow, outdated and painful



Actual materials from energy audit



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Energy Auditor



What

Software and Hardware
Approach:

- Increase speed and quality
- Store data electronically to leverage for other uses
- Automatically create energy models for detailed ECM

Goals

Lower the cost of Level III
energy audits by

75%

Store data in a consistent,
reusable, multi-purpose
digital format

Data Libraries



building
component
library



utilities



weather



PV
equipment

Geometric Capture



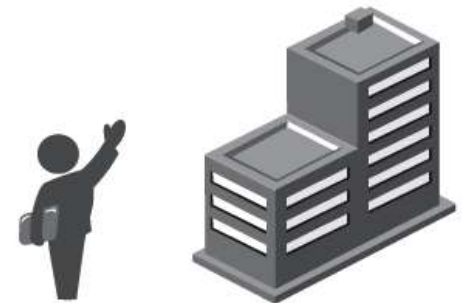
Reports



quotes
permits

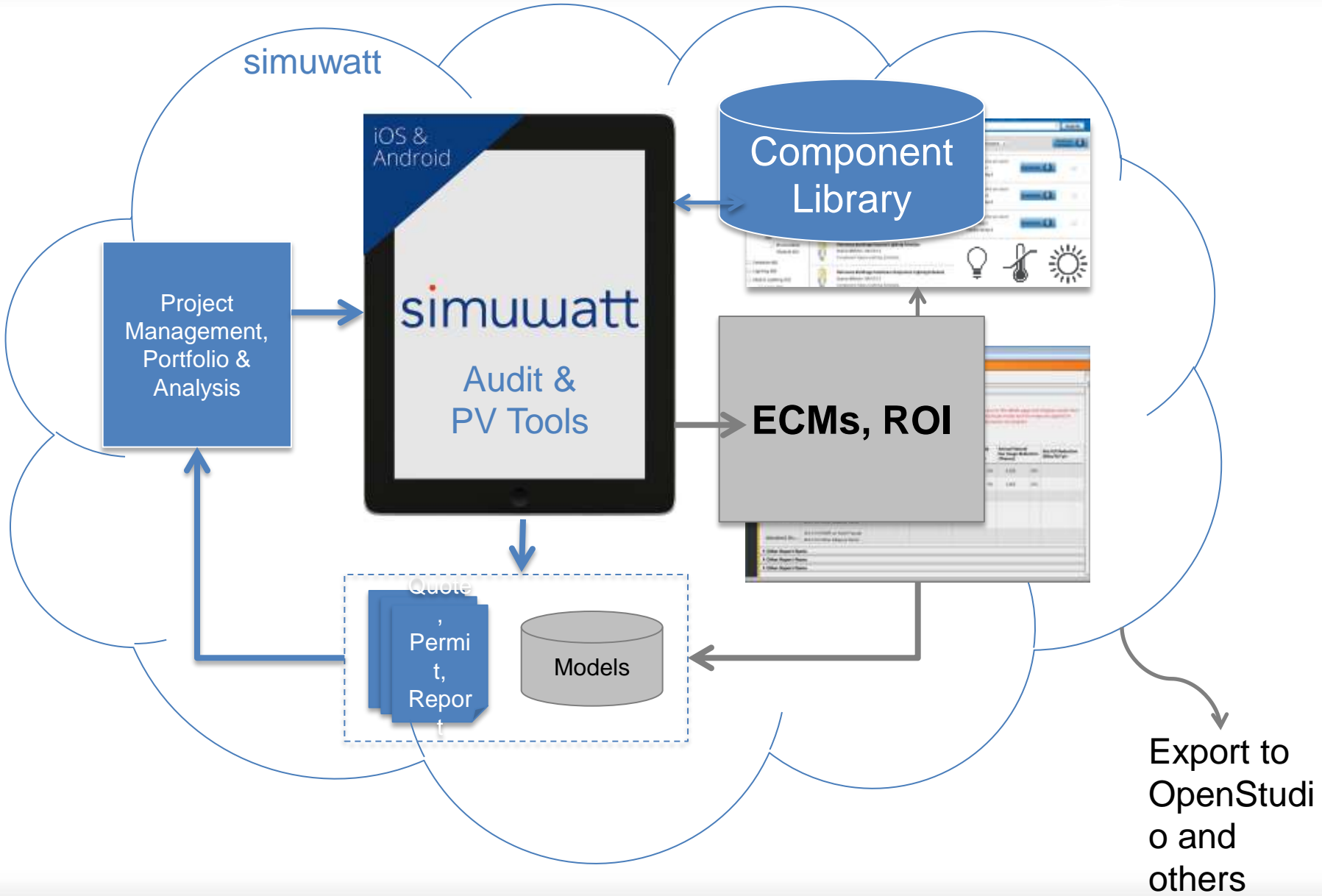


Collaborate from Office & Site



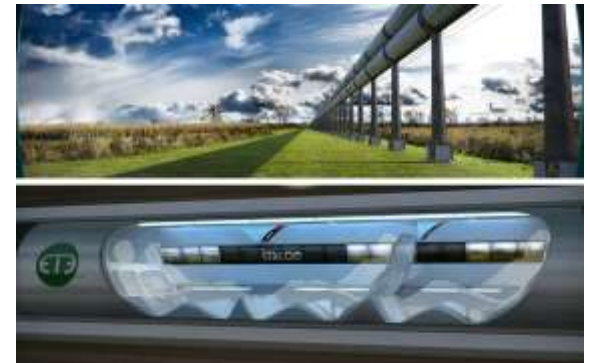
OpenStudio, SketchUp & SAM





Outcome

- Speed
 - New software and mobile hardware platforms ideal for field audits
- Consistent
 - Multiple data sources and tools allow for rapid, standard processes
- Market Impacting – From Steam to Hyperloop
 - New applications and simulations required to meet market demand



- Needs
 - Collaboration with other applications for M&V, financing institutions, further software integration

Beta Testers Welcome!

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